	Application No.	Applicant(s)
Notice of Allowability	09/842,438	MULLER, ULRICH A.
	Examiner	Art Unit	
	Timothy M. Harbeck	3692	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to *Remarks submitted 12/15/2006.*

2. ☒ The allowed claim(s) is/are *1-11*.

3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a) ☐ All   b) ☐ Some*   c) ☐ None   of the:

      1. ☐ Certified copies of the priority documents have been received.

      2. ☐ Certified copies of the priority documents have been received in Application No. _____ .

      3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

    * Certified copies not received: _____ .

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.

5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.

    (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached

      1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____ .

    (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of

    Paper No./Mail Date _____ .

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).

6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)

2. ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)

3. ☐ Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date _____

4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material

5. ☐ Notice of Informal Patent Application

6. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____ .

7. ☐ Examiner's Amendment/Comment

8. ☒ Examiner's Statement of Reasons for Allowance

9. ☐ Other _____ .

FRANTZY POINVIL
PRIMARY EXAMINER

AU 3692

DETAILED ACTION

Allowable Subject Matter

Claims 1-11 are allowed.

The following is an examiner's statement of reasons for allowance: the prior art does not disclose, teach or suggest each and every limitation of the independent claim. The present invention is directed to a method of determining value-at-risk based on tick-by-tick financial data.

Major steps of the method comprise the following: (1) financial market transaction data is electronically received by a computer; (2) the received financial market transaction data is electronically; (3) a time series z is constructed that models the received financial market transaction data; (4) an exponential moving average operator is constructed; (5) an operator is constructed that is based on the exponential moving average operator; (6) a causal operator $\Omega[z]$ is constructed that is based on the iterated exponential moving average operator; (7) values of predictive factors are calculated; (8) the values calculated by the computer are stored in a computer readable medium, and (9) value-at-risk is calculated from the values stored in step (8).

Explicitly Independent Claim 1 reads:

A method of determining value-at-risk, comprising the steps of

- Electronically receiving financial market transaction data over an electronic network;

  electronically storing in a computer-readable medium said received financial market transaction data;

  constructing an inhomogeneous time series z that represents said received financial market transaction data;

constructing an exponential moving average operator;

constructing an iterated exponential moving average operator based on said exponential moving average operator;

constructing a time-translation-invariant, causal operator Ω [z] that is a convolution operator with kernel ω and that is based on said iterated exponential moving average operator;

electronically calculating values of one or more predictive factors relating to said time series z, wherein said one or more predictive factors are defined in terms of said operator Ω [z];

electronically storing in a computer readable medium said calculated values of one or more predictive factors; and

electronically calculating value-at-risk from said calculated values.

The prior art of record includes:

- J.C. Hull, <u>Options, Futures & Other Derivatives </u>(4th. ed., Prentice Hall, 2000)

Hull describes a simple example of an exponential moving average (EMA) operator, and therefore the well known step of "constructing an exponential moving average operator" (pages 368-372) as described in Independent Claim 1.

Hull further describes value-at-risk as an attempt to provide a single number for summarizing the total risk in a portfolio of financial assets. Hull provides methods for calculations of value-at-risk in simple situations.

Absent, however from Hull are the specific series of steps for utilizing the operator for calculating a value-at-risk, including constructing an iterated exponential moving

average operator, a time-translation-invariant based on said iterated exponential

operator and using these values to calculate predictive factors and further value-at-risk.

As set forth at page 1, lines 12-17 risk measurement is critical in the operation of

banks and other financial institutions since risk levels determine capital requirements.

Applicant has found that conventional methods of measuring risk by analyzing daily

data are inadequate and applicant proposes a new method that is the subject of the

present claims.

The amount of risk that is measured determines the capital requirements of the

financial institution. As pointed out at page 2, lines 16-20, applicant has observed that

conventional methods of measuring risk by analyzing daily data are very sensitive to the

choice of sampling time and have high levels of stochastic (or random) noise.

Applicant's method for calculating risk has significantly reduced noise and up-to-date

results are available at each tick.

Any comments considered necessary by applicant must be submitted no later

than the payment of the issue fee and, to avoid processing delays, should preferably

accompany the issue fee. Such submissions should be clearly labeled "Comments on

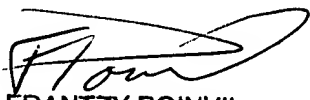Statement of Reasons for Allowance."

Conclusion

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Timothy M. Harbeck whose telephone number is 571-

272-8123. The examiner can normally be reached on M-F 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Richard Chilcot can be reached on 571-272-6777. The fax phone number

for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the

Patent Application Information Retrieval (PAIR) system. Status information for

published applications may be obtained from either Private PAIR or Public PAIR.

Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see http://pair-direct.uspto.gov. Should

you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a

USPTO Customer Service Representative or access to the automated information

system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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